

Global Warming

- **The Greenhouse Effect**

- Earth is similar to a _____
- Atmosphere acts like the glass in a greenhouse
- Sunlight streams through the atmosphere & heats the Earth
- As this heat radiates up from the Earth's surface, some of it escapes back into space
- The rest is absorbed by gases in the troposphere & warms the air

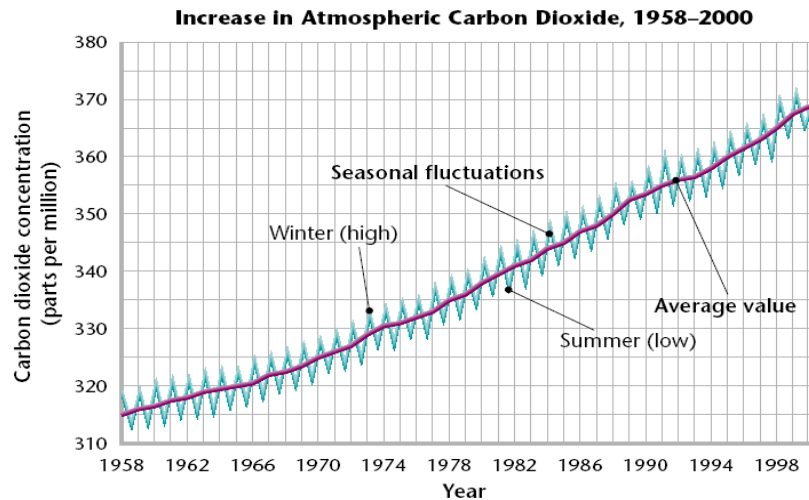
- **Greenhouse Gases**

- Gases that absorb & radiate heat
 - _____ (CO_2): burning fossil fuels & deforestation
 - _____ (CFCs): refrigerants, aerosols, propellants
 - _____ (CH_4): animal waste, biomass burning, fossil fuels, landfills, livestock, sewage
 - _____ (N_2O): biomass burning, deforestation, burning fossil fuels, microbial activity
 - _____ (H_2O): evaporation, plant respiration



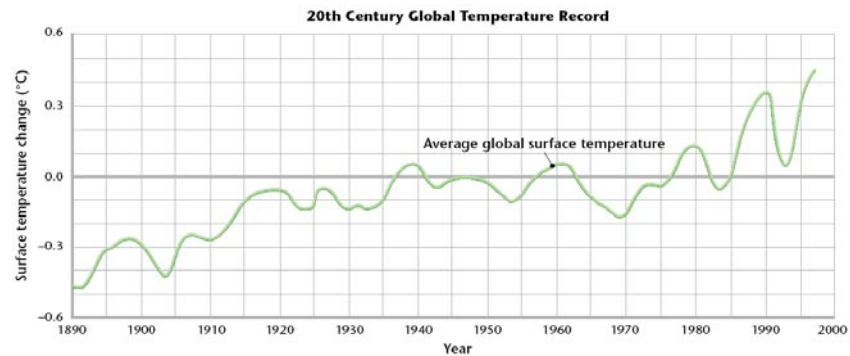
- **Measuring CO_2 Levels**

- Varies with _____
 - Summer → growing plants use CO_2 (levels decrease)
 - Winter → grass & leaves decay & release carbon (levels rise)
- CO_2 levels have increased by over _____% in less than 50 years
 - Burning of fossil fuels (power plants, cars)
 - Millions of trees are burned in _____ to clear the land



- **Global Warming**

- A gradual increase in the average global _____
- Link between the increase in greenhouse gases in the atmosphere and the increase in temperature



- **The Consequences of a Warmer Earth**

- **Melting Ice & Rising Sea Levels**
 - Coastal wetlands & other low-lying areas could be _____
 - Beaches could be extremely _____
 - _____ of bays & estuaries might increase, adversely affecting marine fisheries
- **Global Weather Patterns**
 - Hurricanes & typhoons may be more common
 - Cause a change in ocean _____ patterns (like shutting off the Gulf Stream) which could significantly affect the world's weather
 - Severe flooding & _____

- **Human Health Problems**
 - Greater numbers of heat-related deaths
 - _____ (trees & flowers flowering earlier & longer)
 - Mosquitoes could establish themselves in areas that are too cold for them now (spread diseases)
- **Agriculture**
 - Decreased crop _____
 - Higher demand for irrigation → depleting aquifers
- **Effects of Plants & Animals**
 - Alter range of _____ & composition of plant communities
 - Reduction of _____ (food source for many marine animals) due to warming of surface waters
 - Might kill _____ that nourishes corals (killing coral reefs)
- **Reducing the Risk**
 - **Kyoto Protocol**
 - Requires developed countries to decrease _____ of carbon dioxide & other greenhouse gases by an average of 5% below their 1990 levels by _____
 - Developed in 1997 by reps from 160 countries
 - In March 2001, the U.S. decided not to ratify the Kyoto Protocol
 - Attempt to slow global warming is made difficult by the _____, _____ & _____ factors faced by different countries.

